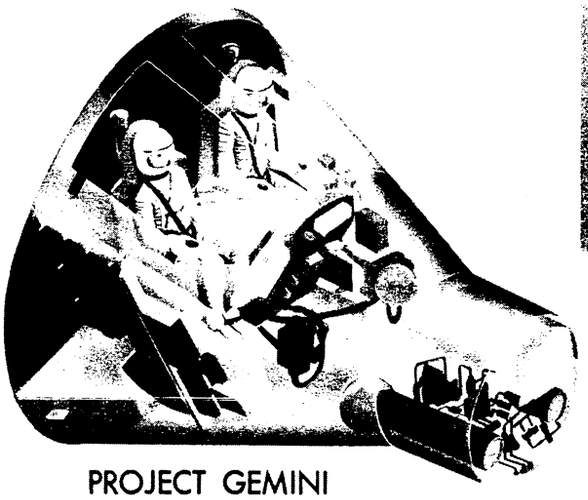
COMPARISON OF MANNED SPACECRAFT



PROJECT GEMINI

PROJECT MERCURY

RENDEZVOUS CAPSULE—The two-man spacecraft Gemini, named for the twin stars Castor and Pollux, will be used to develop rendezvous techniques for joining parts of spacecraft sent aloft separately and for extended earth orbit missions lasting a week or more.

SPACE

Could Capture Asteroid

➤ SCIENTISTS may be able to capture an asteroid, one of the small planets in the solar system, by landing a rocket on it to first slow it down, then speed it up.

Dr. Su-Shu Huang of the National Aeronautics and Space Administration's Goddard Space Flight Center, Greenbelt, Md., reported that an asteroid would have to be slowed down in order to come close enough to earth to be captured into an earth orbit. After this is accomplished, the asteroid would have to be speeded up in order to keep on traveling around the earth.

Such a "captured" asteroid would be important to scientists for studying the origin of the solar system, which is also one of the aims in exploring the moon. The capture could be accomplished by using a rocket with several stages and landing the last stage on the planetoid, Dr. Huang said.

The rocket would keep on firing after landing to modify the speed of the asteroid. After a likely asteroid has been found, a computer can determine how much rocket action is necessary to change the velocity of the asteroid and make it an earth satellite.

Dr. Huang said the asteroid would have to be brought nearer to the earth than the moon, or closer than 232,500 miles from earth.

• Science News Letter, 81:18 January 13, 1962

SPACE

Moon Race Will Increase

➤ THE RACE for the moon will become more competitive in 1962 in prestige, military and scientific aspects.

Foremost there is developing a national will or desire to explore the moon and put an American landing party on the natural satellite of the earth.

This is an objective set forth by President Kennedy last May for an accomplishment of this decade. The U.S. would like to beat the Russians to it. There is a major effort to this end by both National Aeronautics and Space Administration (NASA) and the U.S. Air Force.

Major space industries are being given large amounts of public money to work out plans and mechanisms to get to the moon. There are formidable problems. There must be rockets to boost the spacecraft into space, guidance systems to set the lunar course, radio to communicate with earth, protection against radiation in space, ways for the astronauts to overcome weightlessness and lack of air in space and on the moon, vehicles to travel on the moon, means to get back to earth through the extreme heat of re-entering the earth's atmosphere. There are scores of other needs, some of which are being solved but many are still to be resolved. The control of space between the earth and the moon from a military standpoint is of great concern. From a station on the moon high-energy light beams, or death rays, could be projected upon pinpointed earth areas by the newly developed optical maser or laser technique. The earth might be bombed either from an orbiting man-made satellite or the moon. If this is threatened, the moon might be attacked with H-bombs.

These military operations in space may sound like science fiction but they were serious possibilities discussed informally at the American Association for the Advancement of Science in Denver, Colo.

The difficulties of man living in space and on the moon journey are far greater than propulsion, navigation, guidance, communication and other physical aspects. Some of the unknowns that menace future moon travelers are the role of nitrogen gas in the artificial atmosphere, effects of magnetic flux, gravity lack and radiation from solar flares.

The first human travel to the moon may be by way of a space station established on a satellite. Such a relay station in itself will be a major space task.

Human travel to the moon is obviously not imminent. But instruments within the new year will probably be bringing back information that may change our ideas about the moon.

Whether these will be American or Russian probes is the big question.

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Outer Space Sensations

➤ WHEN ASTRONAUTS are sent into a strange and dangerous environment in a spaceship away from their fellowmen, the confinement and isolation they will experience will cause peculiar things to happen to them, Drs. Neal M. Burns and Douglas Kimura of the Decker Corporation, Bala-Cynwyd, Pa., told the American Association for the Advancement of Science meeting in Denver, Colo.

So few demands will be made on their nervous systems that they will not feel sleepy even if they doze for only a short while every 20 hours or so.

Time will appear to pass more rapidly as they travel through space. If they have little to do during the journey effective thinking will become difficult. The temptation to doze and dream will become almost irresistible.

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Lunar Color Variations

➤ THE MOON shows some variations in color, the Sea of Tranquility being the bluest of the maria, or "seas."

The highlands of the moon's southern half appear slightly reddish, Dr. Sidney van den Bergh of David Dunlap Observatory, Ontario, Canada, reported. Two conspicuous lunar features, the rayed craters Tycho and Copernicus, do not show any color, he told the American Astronomical Society meeting in Denver, Colo.

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